

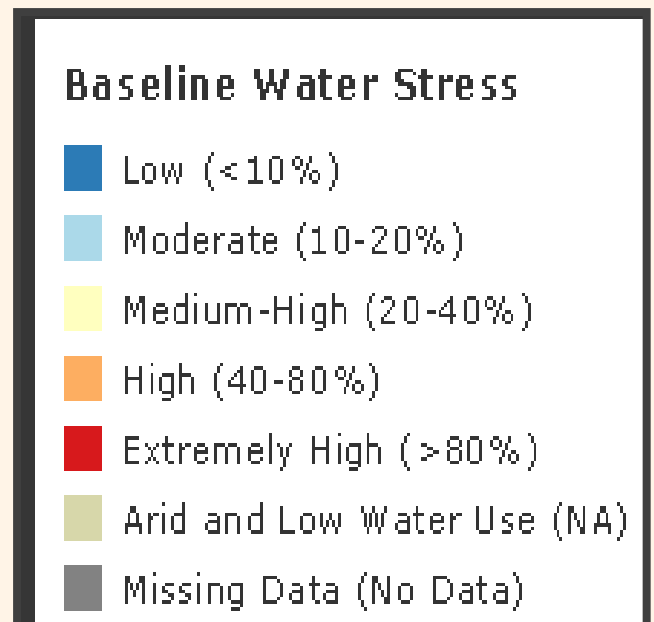
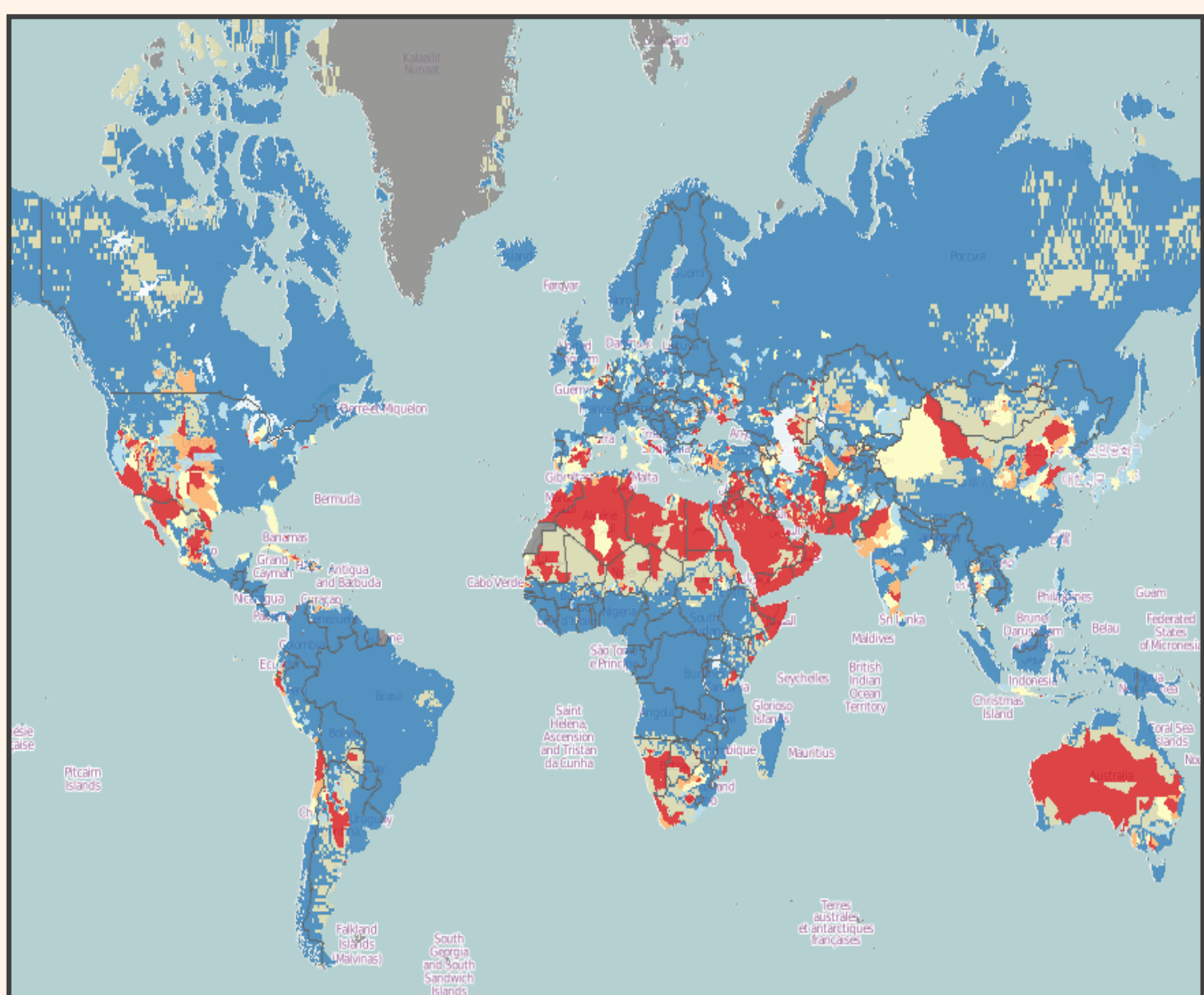
Lead a Horse to Water:

Psychological and Social Factors Associated with Wastewater Reuse Emotional Distress in the United States

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Research Problem

- Water *reuse* is generally *less expensive and better for the environment* than alternative solutions such as desalination.
- However, a general psychological aversion to water reuse known as the “*Yuck Factor*” has been documented in the public.
- Negative public attitudes *limit the possible applications* of water reuse and in some cases, *public opposition alone has overturned reuse plans*.
- Decision making research has identified *anticipated emotion as a powerful predictor of real behavior*.
- The reasons for variability in levels of anticipated emotional distress related to water reuse is not well understood.



Objective

To determine what individual, psychological differences predict emotional aversion to water reuse.



Conclusions and Significance

Our study isolated psychological and individual differences associated with emotional aversion to water reuse.

“Mere exposure” to water reuse is associated with lower distress indicating that *making this technology more “familiar” may increase acceptance*.

Pathogen disgust sensitivity and moral emphasis on “purity” and “fairness” predicted unique variance in disgust, suggesting that emotional aversion to *water reuse might be grounded in both a culturally driven moral sense of what is considered appropriate behavior and a biologically driven desire to avoid contact with disease-causing organisms*.

Methods

- US-based survey conducted using Mechanical Turk (N=218)
- Sample similar to general US population (Table 1)
- Modeled relationship between individual, psychological differences and reported emotional distress at the idea of using recycled water

Table 1. Demographic Characteristics of the Sample

| | N* | Percent | U.S. 2010 Census Statistics |
|-----------------------|-----|---------|-----------------------------|
| Gender | | | |
| Female | 109 | 53.20% | 50.80% |
| Male | 96 | 46.80% | 49.20% |
| Age | | | |
| 18-34 | 115 | 55.70% | 21.30% |
| 35-54 | 44 | 21.40% | 18.10% |
| 55-64 | 16 | 2.50% | 11.60% |
| 65+ | 0 | 0.00% | 12.90% |
| Race | | | |
| White | 164 | 80.00% | 64.20% |
| Black | 19 | 9.30% | 12.20% |
| Hispanic | 4 | 2.00% | 16.10% |
| Asian | 10 | 4.90% | 4.70% |
| Other | 8 | 3.90% | 3.00% |
| Education | | | |
| Less than high school | 5 | 2.40% | 14.60% |
| High school degree | 44 | 21.50% | 28.60% |
| Some college | 57 | 27.80% | 21.00% |
| College Degree | 65 | 31.70% | 25.30% |
| Advanced degree | 34 | 16.60% | 10.50% |
| Yearly Income | | | |
| \$0-20,000 | 25 | 12.40% | 17.80% |
| \$20K-40,000 | 66 | 32.70% | 20.30% |
| \$40K-60,000 | 46 | 22.80% | 21.40% |
| \$60K-80,000 | 23 | 11.40% | 10.30% |
| \$80K-100,000 | 16 | 7.90% | 8.30% |
| Above \$100,000 | 26 | 12.90% | 21.90% |

* Due to missing data the total N does not always add up to 207 for each variable.

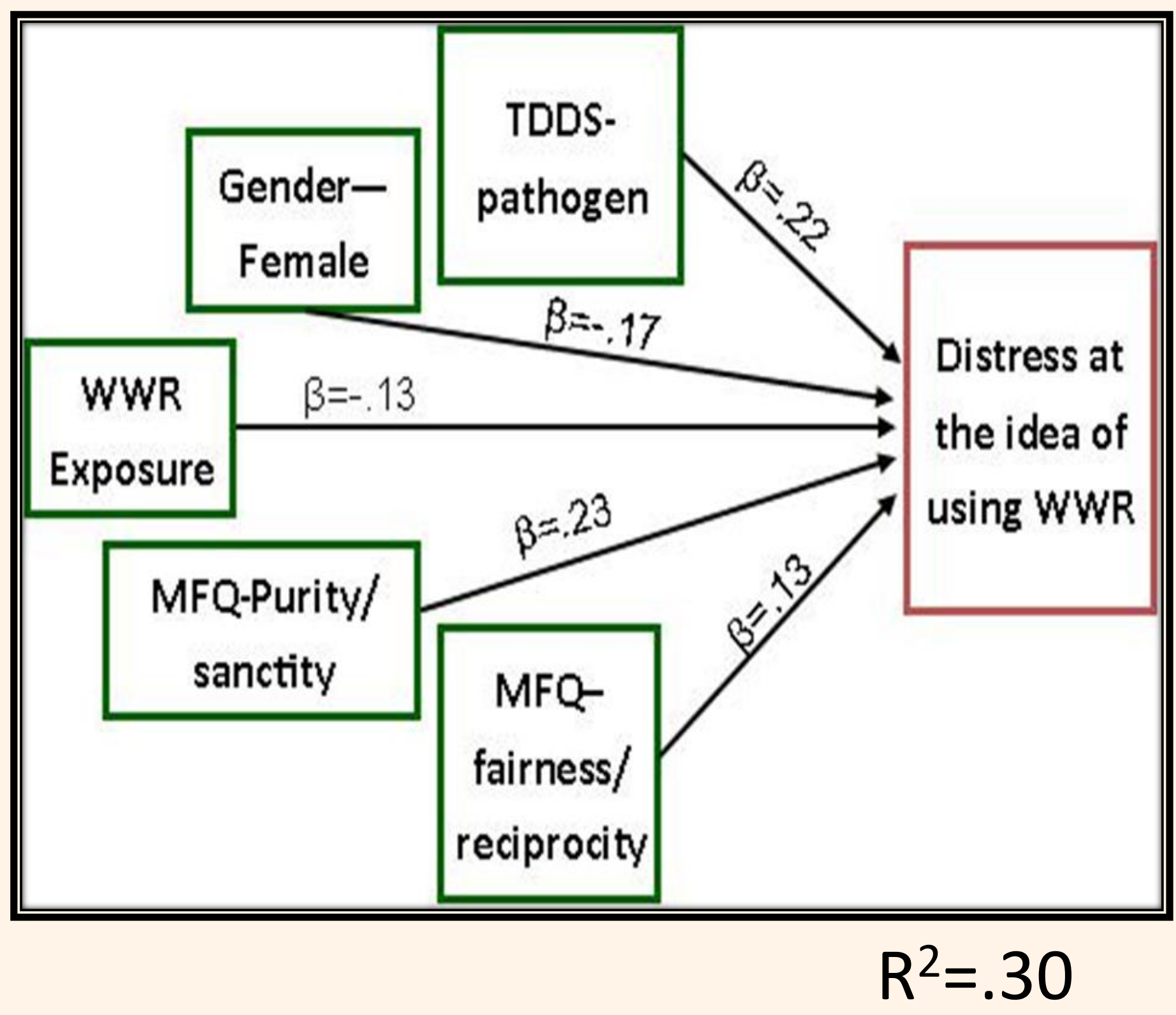
Results

Preliminary examination of zero-order correlations identified gender, education, disgust sensitivity, all five moral foundations, social conservatism, and drinking water habits (e.g., bottled vs tap water use) as having a relationship with anticipated distress.

| Descriptive Statistics | | | |
|-------------------------|-------|----------------|--------------------------------------|
| | Mean | Std. Deviation | Zero-order correlation with distress |
| Distress | 3.41 | 1.38 | 1 |
| Gender - female | 1.46 | 0.50 | -0.242** |
| Age | 34.47 | 11.50 | 0.004 |
| Years of education | 14.86 | 2.36 | -0.125* |
| Exposure | 1.68 | 0.47 | 0.208** |
| Pathogen disgust | 24.49 | 8.48 | 0.404** |
| Sexual disgust | 16.85 | 11.22 | 0.342** |
| Moral disgust | 22.72 | 11.59 | 0.051 |
| MFQ Fairness | 3.86 | 0.83 | 0.240** |
| MFQ Purity | 2.56 | 1.16 | 0.390** |
| MFQ Harm | 3.84 | 0.76 | 0.172** |
| MFQ Ingroup | 2.93 | 0.92 | 0.363** |
| MFQ Authority | 2.62 | 0.99 | 0.361** |
| Social conservatism | 3.51 | 1.05 | -0.192** |
| Economic conservatism | 2.99 | 1.02 | 0.020 |
| % bottled | 31.49 | 37.36 | 0.219** |
| % filtered tap water | 28.56 | 37.32 | -0.139* |
| % tap in a typical week | 40.88 | 39.00 | -0.102 |

**p<.01; *p<.05

Final Model



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